DOC	USER MANUAL
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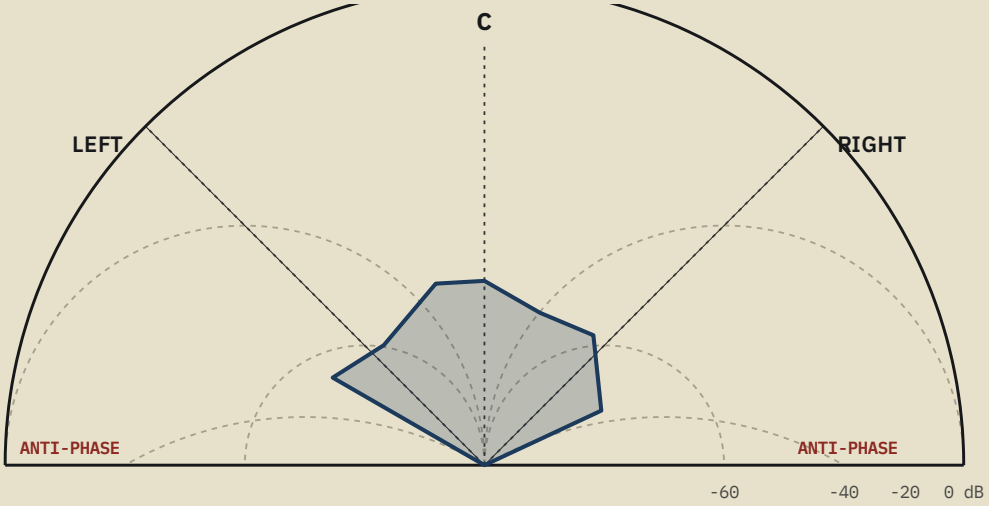
TYPE	BKR-1

WIRELESS MASTERING METER · TYPE BKR-1

BKR MASTERING METER

A wireless metering bridge for the mastering room — spectrum, loudness, phase and level metering on your Android device, streamed live from your DAW.



PLUGIN	BKR MasterStreamer · VST3 / AU
APP	Android · landscape
LINK	UDP / Wi-Fi · default port 9002

01 Overview

WHAT IT IS

The BKR Mastering Meter turns an Android phone or tablet into a dedicated, second-screen metering bridge for your mastering chain — without cables, an audio interface, or a free monitor on your computer.

The system has two parts. A companion plugin, **BKR MasterStreamer** (VST3/AU), sits on your master bus and streams the program audio out over your local network. The **BKR Meter App** on your Android device listens for that stream and renders four mastering instruments in real time.

Everything stays on your network. The audio travels as raw UDP packets between your computer and your phone — nothing is recorded, and nothing is sent to the internet.

Every tool is chosen to answer a question a mastering — and especially a **vinyl cutting** — engineer cares about: true digital level, perceived loudness, sibilance, low-end mono compatibility, and how much dynamic range is left.

THE FOUR INSTRUMENTS

FFT	Spectrum + Waveform
LUFS	Loudness (S / I / LRA)
PHASE	Stereo · Correlation · Scope
VU	Average + Peak Level

PRIVACY
The stream is local only (LAN/Wi-Fi). No cloud, no account, no recording.

ALSO IN THE BOX
Prefer to stay in the box? A native VST3/AU meter runs the same four instruments directly in your DAW — no phone, no network.

› How it works

Audio leaves your DAW through the plugin and arrives at the app as a metering stream. The app never sends audio back — it only listens.

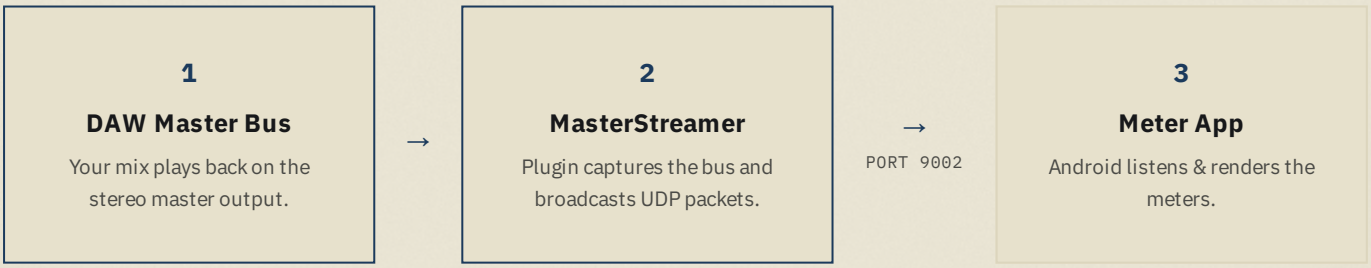


FIG. 1.1 — **SIGNAL FLOW.** ONE-WAY METERING STREAM OVER THE LOCAL NETWORK.

02 Requirements & Compatibility

BEFORE YOU START

› Plugin (computer)

FORMATS	**VST3 · AU**
HOST OS	**macOS · Windows**
PLACEMENT	**Master / stereo bus**
CHANNELS	**Stereo (2ch)**

› Meter app (device)

PLATFORM	**Android 8+ ***
ORIENTATION	**Landscape**
NETWORK	**Wi-Fi (same LAN)**
SOURCE	**…/zombiephonefx**

* Built for Android 8 and up. Older versions may still run — without guarantee.

› Network

The computer running the plugin and the Android device must be on the **same local network** — typically the same Wi-Fi, or a wired computer and a phone on Wi-Fi behind the same router. The link uses **UDP**, so that traffic must be allowed (not blocked by a firewall, VPN, or “client isolation” on the access point).

> **NOT SUPPORTED YET**
>
> **iPhone / iPad (iOS)** — the meter app is Android-only at this time.
>
> **Native AAX** — there is no AAX build yet.

› Pro Tools

Because there is no native AAX plugin, Pro Tools users can still run the VST3 version inside a third-party VST-to-AAX wrapper. Insert the wrapper on the master bus, load BKR MasterStreamer inside it, and configure it exactly as you would in any other DAW.

> **IN-DAW METER INCLUDED**
>
> The package also ships a native VST3/AU meter — the same four instruments, shown right in your DAW, with no phone or network required.

03 Quick Start

5 MINUTES

The short version. Full detail follows in §04.

1 Install the plugin
Download BKR MasterStreamer (VST3/AU) from bunkeranalog.com/zombiephonefx and install it for your DAW.

2 Install the app
Install the BKR Mastering Meter on your Android device and open it. It opens in landscape, already listening.

3 Same Wi-Fi
Put the phone and the computer on the same Wi-Fi network.

4 Find the phone's IP
Tap SETTINGS in the app. Note the IP and PORT (default 9002) shown under Network Config.

5 Point the plugin
Insert MasterStreamer on the master bus. Enter the phone's IP and the same port as the destination.

6 Play
Start playback. STATUS: LISTENING and a rising PKT/S rate mean you're connected. The meters move.

> **CONNECTED WHEN**
> Status reads **LISTENING** and the packet rate (PKT/S) is non-zero while audio plays.

> **NO PHONE?**
> The package also ships a **VST3/AU meter** plugin — load it on your master bus to use the same instruments inside the DAW and skip the network setup entirely.

04 Connecting

IN DETAIL

The plugin sends; the app receives. You only need to make sure both agree on one address and one port, on one network.

FIG. 4.1 — THE PHONE'S **IP** IS THE PLUGIN'S DESTINATION. BOTH ENDS USE THE SAME PORT.

› Step by step

1. **Open the app & read Network Config**
   Tap SETTINGS (bottom of any meter). The left panel shows STATUS, the device IP, and the live packet RATE.

2. **Set / confirm the port**
   The right panel holds the UDP PORT (default 9002). Any value from 1024–65535 is valid. Tap SAVE after changing it.

3. **Configure the plugin**
   In MasterStreamer, set the destination IP = the phone's IP and the port = the app's port. They must match exactly.

4. **Play & confirm**
   Start playback. Status flips to LISTENING and PKT/S climbs. If it stays at 0, see §11.

› Reading the telemetry

FIELD	MEANS
STATUS	Listening = socket open & bound. Binding…/Stopped/Error otherwise.
IP	This device's address on the network — type it into the plugin.
RATE	Packets received per second (PKT/S). Non-zero = audio is arriving.
PORT	UDP port both ends share. Change only if 9002 is in use.

> **TIP**
> Give the phone a **static / reserved IP** in your router so you don't have to re-enter it in the plugin every session.

05 The Interface

NAVIGATION

Every instrument shares one layout: a fixed navigation rail on the left, the instrument screen in the center, and a row of controls along the bottom.

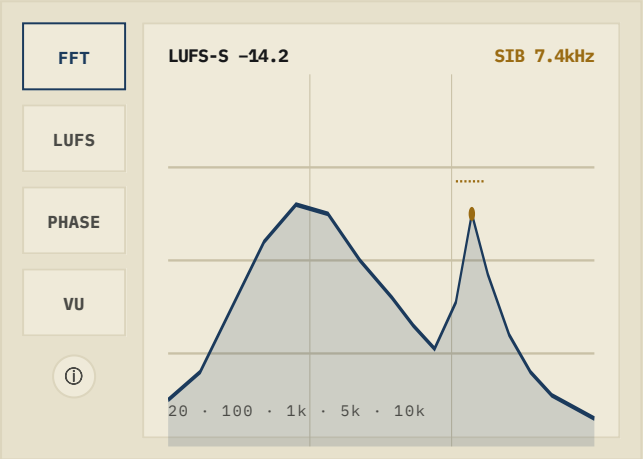


FIG. 5.1 — **SHARED LAYOUT** (FFT SHOWN). RAIL · SCREEN · CONTROLS.

› Navigation rail

Four instruments, always one tap away. The lit button is the active view; the ⓘ badge opens the About / download panel.

FFT	**Spectrum & waveform**
LUFS	**Loudness numbers**
PHASE	**Stereo & scope**
VU	**Average + peak meter**

› Common controls

SETTINGS appears on every screen. A filled (green) button is **engaged**; an outlined button is off — the same convention across all instruments (FREEZE, PEAK HOLD, WAVEFORM, SCOPE…).

> **ALWAYS-ON READOUT**
> A small LUFS-S value sits in the top-left of the FFT and PHASE screens so loudness is visible while you work elsewhere.

06 FFT — Spectrum Analyzer

INSTRUMENT 1

A high-resolution real-time spectrum with a built-in vinyl sibilance watch, plus an alternate scrolling waveform overview for judging transients and headroom.

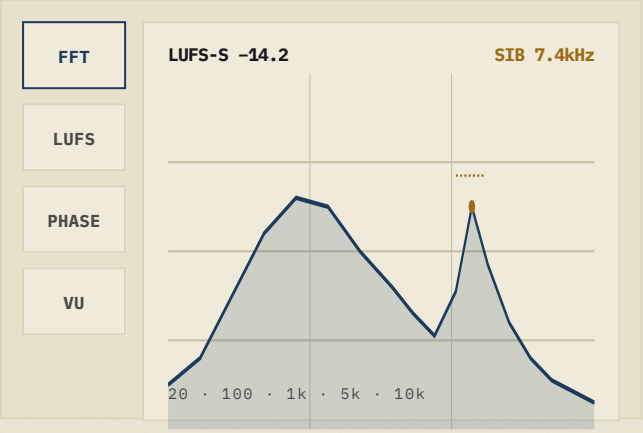


FIG. 6.1 — **FFT VIEW.** NUMBERS KEYED TO THE LIST AT RIGHT.

1. **LUFS-S readout**
   Short-term loudness, always visible.
2. **SIB callout**
   The single frequency most at risk for sibilance — yellow = warning, red = danger.
3. **0 dBFS line (gold)**
   Digital full scale. Anything touching it is clipping the converter.
4. **Spectrum trace**
   1/16-octave resolution, 161 bands from 20 Hz up.
5. **Frequency axis**
   Logarithmic, 20 Hz – 20 kHz.
6. **Navigation rail**

› Controls

BUTTON	FUNCTION
WAVEFORM	Switches the screen to a scrolling ~6 s mono (L+R) waveform overview.
FREEZE	Holds the current display so you can study it.
PEAK HOLD	Leaves a phosphor trace at each band's maximum (and outlines the waveform's peak envelope).
SETTINGS	Opens Network Config and the sibilance thresholds (§10).

› The vinyl sibilance watch

High-frequency energy (roughly 2–10 kHz) is what makes a lacquer overheat and a stylus mistrack. The analyzer continuously scores each band against your Warning and Danger thresholds (set in §10) and surfaces the worst offender as the SIB frequency. Bands in trouble turn yellow, then red, right on the trace. De-ess or dip that region until the callout clears.

RESOLUTION	**1/16 octave · 161 bands**
RANGE	**20 Hz – 20 kHz · log**
LEVEL SCALE	**−120 … +6 dBFS**
WAVEFORM	**~6 s · mono sum · dBFS ruler**

› Waveform overview — transients & headroom

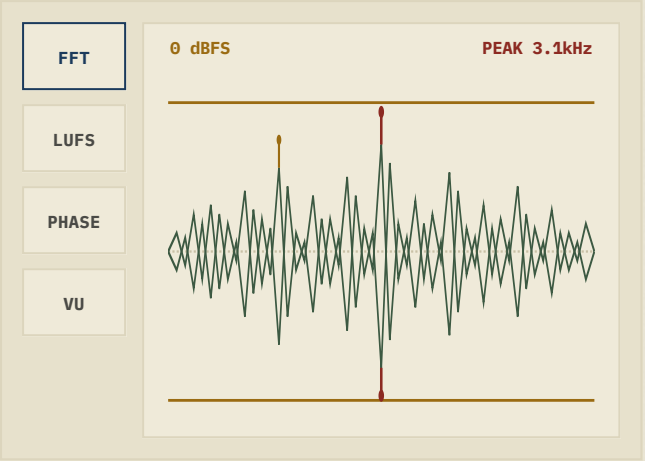


FIG. 6.2 — **WAVEFORM OVERVIEW.** GREEN BODY; PEAK TIPS COLOUR ORANGE→RED AS TRANSIENTS STAND OUT.

Press **WAVEFORM** to swap the spectrum for a scrolling **~6-second mono (L+R)** overview — the dense, filled shape you'd see on a DAW timeline. New audio enters from the right.

The vertical axis is **dBFS**, mirrored about the centre line, with the **0 dBFS** edges marked in gold — the gap from a peak tip to that line is your **headroom**. The body of the wave stays green; only the **tips of peaks that rise above the on-screen average** colour up, orange then red, the more they stand out. Ordinary dynamics stay green, so the transients a limiter would catch are exactly the ones that light. Watch them shrink back into the body as you apply compression.

With **PEAK HOLD** on, the maximum envelope is outlined above the live wave and a **PEAK** callout names the dominant frequency of the loudest transient.

07 LUFS — Loudness Meter

INSTRUMENT 2

Perceived loudness to the ITU-R BS.1770 standard, on a large 7-segment readout. Three metrics share one display.

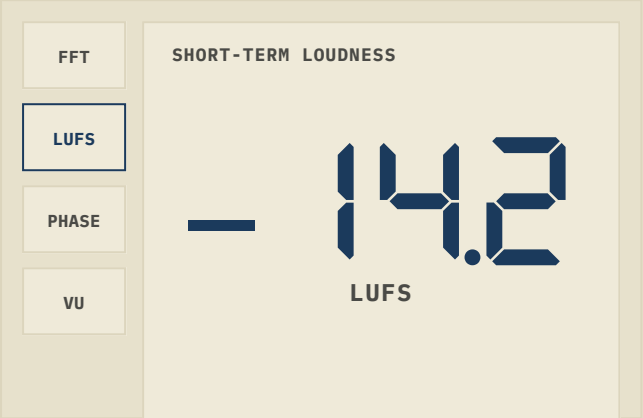


FIG. 7.1 — **LUFS VIEW** SHOWING SHORT-TERM. THE FAINT “88.8” IS THE UNLIT-SEGMENT BACKDROP.

1. **Metric label**
   Which loudness metric is on screen.
2. **Main readout**
   True 7-segment numerals with a phosphor glow.
3. **Unit**
   LUFS for S/I, LU for LRA.

› Choosing a metric

The bottom row selects what the big number shows. **RESET LRA** clears the integration history so Integrated and Range start measuring fresh — use it at the top of each track.

› The three metrics

METRIC	WINDOW	WHAT IT TELLS YOU
LUFS-S · Short-term	3 s	Loudness of the last 3 seconds — the “how loud is this part” number. Reacts to sections.
LUFS-I · Integrated	whole pass	Gated average loudness of everything since the last reset — the single number that describes the master.
LRA · Range	whole pass	Loudness Range in LU (95th – 10th percentile). How much the loudness moves — i.e. how dynamic the master is.

METHOD
K-weighted per ITU-R BS.1770 (high-shelf + high-pass), measured at 10 Hz. Integrated and LRA use the standard absolute (–70 LUFS) and relative gates; LRA also applies the –20 LU range gate.

08 PHASE — Stereo & Correlation

INSTRUMENT 3

A polar energy/correlation meter that shows where your stereo image sits — and warns when content drifts out of phase. A built-in scope and a vinyl-specific low-frequency mono check round it out.

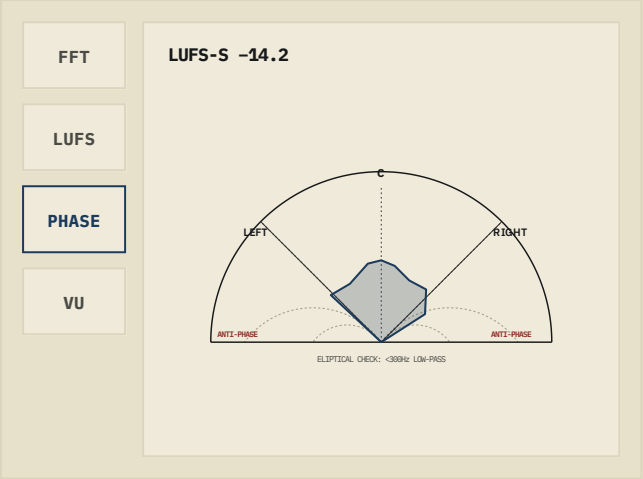


FIG. 8.1 — **PHASE (X-Y ENERGY) VIEW.** LIVE ENERGY FANS OUT BETWEEN LEFT AND RIGHT.

1. **Center (C)**
   Straight up = perfectly mono / centered energy.
2. **Left / Right**
   Energy leaning to a side shows the image pulling that way.
3. **Anti-phase zones**
   Past the L/R edges = out-of-phase content that may vanish in mono.
4. **Energy fill (live)**
   The glowing shape is the current stereo distribution.
5. **Eliptical Check status**
   Shown when the <300 Hz low-pass is engaged.

› Eliptical Check — for vinyl

A record can't hold out-of-phase bass: it makes the cutter head jump vertically and the needle skip. **Eliptical Check** applies a ~300 Hz low-pass so the meter shows only the low end. If that low-frequency energy doesn't collapse toward Center, your bass isn't mono — narrow it before cutting. (Applies to the X-Y energy view.)

› SCOPE mode

The **SCOPE** button swaps the polar meter for an oscilloscope. By default it's a dual-trace view — Left on top, Right below, amplitude vs. time. The **X-Y** button turns it into a classic Lissajous vectorscope (X = side, Y = mid) for reading width and phase as a shape.

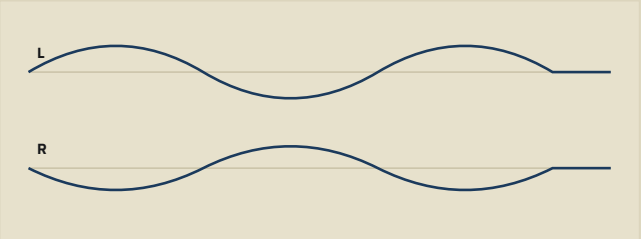


FIG. 8.2 — **DUAL-TRACE SCOPE.**

09 VU — Loudness Meter

INSTRUMENT 4

A combined loudness meter that shows average level and peak level on one scale at the same time — so you read loudness and crest factor in a single glance.

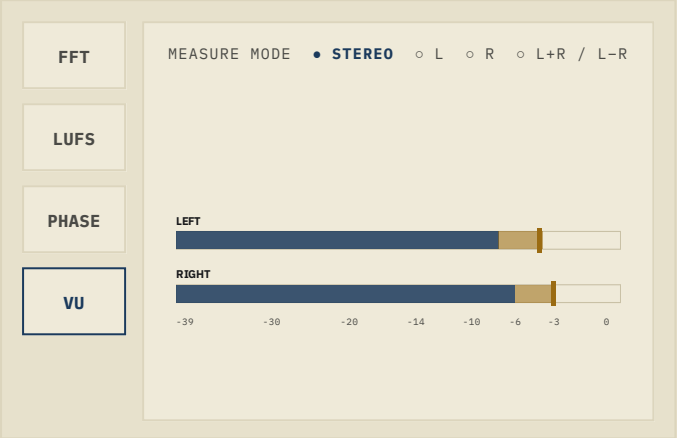


FIG. 9.1 — **VU VIEW, STEREO MODE.** SOLID BAR = AVERAGE; FLOATING TICK = PEAK.

1. **Average bar**
   The filled LED bar — perceived/RMS level.
2. **Peak tick**
   The floating segment — the instantaneous peak. The gap to the bar is your crest factor.
3. **Color zones**
   Green → yellow → red as level rises toward 0.
4. **dB scale**
   −39 dB up to 0.
5. **Measure mode**
   Choose what the two meters show.

› Measure modes

MODE	TOP / BOTTOM METER
STEREO	Left / Right
L	Left solo / muted
R	muted / Right solo
L+R / L−R	Sum (mono) / Diff (side)

L+R / L−R is the vinyl mode: the Sum meter is your mono content, the Diff meter is the stereo “side.” If Diff rivals Sum in the low end, your bass is too wide to cut cleanly.

PEAK HOLD freezes the highest peak tick; **RESET PEAK** clears it.

10 Settings

NETWORK & THRESHOLDS

The SETTINGS sheet, reachable from every instrument, holds the network link and the sibilance thresholds that drive the FFT's SIB watch.

› Network Config

Read-only telemetry (STATUS / IP / RATE) on the left; the editable **UDP PORT** on the right. Enter a port from 1024–65535 and tap **SAVE** — the app re-binds immediately. The port saved here must match the plugin.

STATUS	**LISTENING**
IP	**192.168.0.42**
RATE	**58 PKT/S**
PORT	**9002**

› Sibilance Threshold

Two markers define when a high-frequency band is flagged, **relative to the material's own average** — so the watch adapts to each master rather than a fixed dB value.

MARKER	DEFAULT	MEANING
WARNING	−6 dB	Band turns yellow; SIB shows it in yellow.
DANGER	0 dB	Band turns red and outranks any warning.

Range −24…+24 dB. Lower the markers to catch sibilance earlier (cautious cut); raise them to flag only the harshest peaks.

11 Troubleshooting

NO SIGNAL?

Almost every problem is the same problem: the packets aren't reaching the phone. Work down this list.

SYMPTOM	CHECK
STATUS: Listening, but RATE = 0	Packets aren't arriving. Confirm the plugin's destination **IP matches the phone's IP** exactly, the **ports match**, the plugin is **inserted on a playing track**, and both devices are on the **same Wi-Fi/subnet**.
RATE = 0 and never moves	Disable any **VPN** on either device. Turn off "client / AP isolation" on the router (it blocks device-to-device traffic). Allow the DAW through the computer's **firewall** (outbound UDP).
STATUS won't reach Listening	The port may be in use or invalid. Pick another value in 1024–65535 and SAVE — and set the plugin to the same one.
Meters move but stutter / lag	Wi-Fi congestion. Use a **5 GHz** network, move closer to the router, or reduce other network load.
Display freezes	Check whether **FREEZE** is engaged (it's a feature). Otherwise re-check the link.
Screen sleeps mid-session	The app holds a wake-lock, but set the device to stay awake while plugged in for long sessions.
No plugin in the DAW	Re-scan plugins; on Pro Tools, load the VST3 inside a VST-to-AAX wrapper (§02).

> **FASTEST TEST**
> Open SETTINGS, play loud audio, and watch RATE. If it's above zero, the link is good and the issue is elsewhere (e.g. FREEZE, or the plugin not on the master bus).

12 Glossary

TERMS

LUFS
Loudness Units relative to Full Scale — the standard unit of perceived loudness (BS.1770).

LU
Loudness Unit; a relative loudness difference. 1 LU = 1 dB. Used for LRA.

LRA
Loudness Range — the spread between quiet and loud passages (95th – 10th percentile).

dBFS
Decibels relative to digital Full Scale. 0 dBFS is the maximum; above it is clipping.

K-weighting
The frequency weighting (shelf + high-pass) applied before measuring LUFS.

Crest factor
The gap between peak and average level — how “punchy” vs. squashed a signal is.

Correlation / Phase
How alike the L and R channels are. Centered = mono; spread = wide.

Anti-phase
L and R cancelling each other — content that disappears in mono.

Mono compatibility
Whether a stereo mix survives being summed to mono — critical for vinyl.

FFT
Fast Fourier Transform — the math that turns audio into a frequency spectrum.

1/16 octave
The spectrum’s band resolution: each octave split into 16 bands.

Sibilance
Harsh “s/sh” energy around 2–10 kHz that can damage a vinyl cut.

Peak / average meter
A meter showing peak and average level together on one scale, so loudness and crest factor read at a glance.

Vectorscope / Lissajous
An X-Y plot of L vs. R that draws the stereo image as a shape.

Eliptical EQ / check
Mono-ing the low frequencies (here, a <300 Hz check) so bass can be cut to disc.

UDP
The lightweight network protocol the meter stream travels over.

SUPPORT & DOWNLOADS

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www.bunkeranalog.com/zombiephonefx

www.zombiephonefx.com

BKR Mastering Meter

User Manual · Rev. 1.0